

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A Border Gateway Protocol Speaker (BGP Speaker) in a communication system which implements at least one network based Virtual Private Network (NB-VPN) across a backbone, the at least one NB-VPN using an Open System Interconnect (OSI) layer-2 protocol and an OSI layer-3 protocol, one or more of the at least one NB-VPN using an OSI layer-2 protocol different from an OSI layer-2 protocol used by the backbone or using an OSI layer-3 protocol different from an OSI layer-3 protocol used by the backbone, the BGP Speaker operable to:

~~transmitting~~ transmit an Update message being in conformance with a Border Gateway Protocol (BGP), ~~and~~ the Update message further including:

Virtual Private Network (VPN) Membership information that indicates an identification of at least one VPN to which the Update message relates;

a VPN Reachability Mode field that indicates a type of VPN model being used by the at least one VPN;

VPN Reachability information that indicates at least one route by which the at least one VPN can be reached; and

Tunnel Mechanism information that indicates characteristics of a tunnel used to transport VPN packets across the backbone.

2. (Original) The BGP Speaker of claim 1 wherein the VPN Membership information includes:

at least one VPN Identification (VPN-ID) field; and

a Number of VPN-IDs field.

3. (Original) The BGP Speaker of claim 1 wherein the VPN Reachability information includes zero or more VPN Reachability Entries.

4. (Original) The BGP Speaker of claim 3 wherein a VPN Reachability Entry includes:

a VPN Reachability Type field;

a Length field; and

a VPN Reachability Value field.

5. (Original) The BGP Speaker of claim 1 wherein the Tunnel Mechanism information includes zero or more VPN Tunnel Entries.

6. (Original) The BGP Speaker of claim 5 wherein a VPN Tunnel Entry includes:

a Tunnel Type field;

a Length field; and

a Tunnel Value field.

7. (Original) The BGP Speaker of claim 1 wherein the Update message includes a unique Subsequent Address Family Identifier (SAFI) value indicating that the Update message includes:

Virtual Private Network (VPN) Membership information;

VPN Reachability information; and

Tunnel Mechanism information.

8. (Original) The BGP Speaker of claim 7 wherein the unique SAFI value is 129.

9. (Original) The BGP Speaker of claim 1 wherein the Update message further includes a field indicating a topology of a NB-VPN.

10. (Currently amended) In a communication system which implements at least one network based Virtual Private Network (NB-VPN) across a backbone, the at least one NB-VPN using an Open System Interconnect (OSI) layer-2 protocol and an OSI layer-3 protocol, one or more of the at least one NB-VPN using an OSI layer-2 protocol different from an OSI layer-2 protocol used by the backbone or using an OSI layer-3 protocol different from an OSI layer-3 protocol used by the backbone, a method for transmitting an Update message embodied in a transmission medium and comprising a data format, the method comprising the data format being in conformance with a Border Gateway Protocol (BGP) and further including:

transmitting the data format in conformance with a Border Gateway Protocol (BGP), wherein transmitting the data format further comprises transmitting:

Virtual Private Network (VPN) Membership information that indicates the identification of at least one VPN to which the Update message relates;

a VPN Reachability Mode field that indicates a type of VPN model being used by the at least one VPN;

VPN Reachability information that indicates at least one route by which the at least one VPN can be reached; and

Tunnel Mechanism information that indicates characteristics of a tunnel used to transport VPN packets across the backbone.

11. (Currently amended) The Update-message method of claim 10 wherein transmitting the VPN Membership information includes transmitting:

at least one VPN Identification (VPN-ID) field; and

a Number of VPN-IDs field.

12. (Currently amended) The Update-message method of claim 10 wherein transmitting the VPN Reachability information includes transmitting zero or more VPN Reachability Entries.

13. (Currently amended) The Update-message method of claim 12 wherein transmitting a VPN Reachability Entry includes transmitting:

a VPN Reachability Type field;

a Length field; and

a VPN Reachability Value field.

14. (Currently amended) The ~~Update-message~~ method of claim 10 wherein transmitting the Tunnel Mechanism information includes transmitting zero or more VPN Tunnel Entries.

15. (Currently amended) The ~~Update-message~~ method of claim 14 wherein transmitting a VPN Tunnel Entry includes transmitting:

a Tunnel Type field;

a Length field; and

a Tunnel Value field.

16. (Currently amended) The ~~Update-message~~ method of claim 10 wherein a unique Subsequent Address Family Identifier (SAFI) value is transmitted ~~used~~ to indicate that the Update message includes:

Virtual Private Network (VPN) Membership information;

VPN Reachability information; and

Tunnel Mechanism information.

17. (Currently amended) The ~~Update-message~~ method of claim 16 wherein the unique SAFI value that is transmitted is 129.

18. (Currently amended) The ~~Update-message~~ method of claim 10 further including transmitting a field indicating a topology of a NB-VPN.

19. (Currently amended) A Virtual Router (VR) in a communication system which implements at least one network based Virtual Private Network (NB-VPN) across a backbone,

the at least one NB-VPN using an Open System Interconnect (OSI) layer-2 protocol and an OSI layer-3 protocol, one or more of the at least one NB-VPN using an OSI layer-2 protocol different from an OSI layer-2 protocol used by the backbone or using an OSI layer-3 protocol different from an OSI layer-3 protocol used by the backbone, the VR operable to:

~~receiving~~ receive an Update message being in conformance with a Border Gateway Protocol (BGP), the Update message further including information relating to a NB-VPN to which the VR belongs and information relating to networking systems used by the NB-VPN to which the VR belongs[[,]]; and

the VR including instructions for establishing an OSI layer-2 connection to at least one other VR in the communication system based at least in part on information in the Update message;

wherein the Update message comprises:

Virtual Private Network (VPN) Membership information that indicates an identification of at least one VPN to which the Update message relates;

a VPN Reachability Mode field that indicates a type of VPN model being used by the at least one VPN;

VPN Reachability information that indicates at least one route by which the at least one VPN can be reached; and

Tunnel Mechanism information that indicates characteristics of a tunnel used to transport VPN packets across the backbone.

20. (Currently amended) The Virtual Router of claim 19 wherein the Update message includes a unique Subsequent Address Family Identifier (SAFI) value indicating that the Update message includes:

the Virtual Private Network (VPN) Membership information;

the VPN Reachability information; and

the Tunnel Mechanism information.

21. (Original) The Virtual Router of claim 20 wherein the unique SAFI value is 129.
22. (New) The BGP Speaker of claim 1, wherein the Update message is for use by BGP speakers receiving the Update message to update routing tables consistent with information included in the Update message; and

the BGP speaker operable to receive Update messages from other BGP speakers having said VPN Membership information, VPN Reachability Mode field, VPN Reachability information and Tunnel Mechanism information, and updating routing tables accordingly.